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Patients Perception and Satisfaction of the Ambulance Service (115) at Shahrekord, IranMehrdad sharifi¹, **Shahram Baraz**², Falaheddin Mohammadi³, Monir **Ramezani**⁴, Safar Ali Esmaili Vardanjani⁵¹Ms, Manager of Health Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran²Doctoral Candidate, School of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran³Ms, Department of Angiography, Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran⁴Doctoral Candidate, Faculty Member of School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran⁵Ms in Nursing Education, Shahrekord University of Medical Science, Shahrekord, Iran
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Abstract: The services provided to the patients of pre-hospital emergency center and their satisfactions indicate the quality of pre-hospital emergency services. The goal of this study is to investigate the satisfaction of patients with Ambulance Service services (115) in Shahrekord in the first half of (2012). In this descriptive and analytic study, 450 patients transferred to the hospital by pre-hospital emergency center were chosen using simple random sampling method and data was collected by using satisfaction evaluation questionnaire. The information obtained under SPSS software version 16 was analyzed by statistical descriptive test, independent t test, variance analysis test and Pierson Correlation test. The findings showed that satisfaction level with pre-hospital emergency services in men, low-educated people, married people, those with the record of using emergency services and those with emergency problems was significantly higher than others. Satisfaction level in all fields was above 50% and was totally 71.12. The highest level of satisfaction was for the efficiency of emergency center (58, 78) and the lowest level of satisfaction in the questions was for the performance of technicians (58, 73). Patients' satisfaction with emergency services and their quality is considered as one of the main concepts in pre-hospital emergency procedures, in the manner that the results of this study showed that patients' satisfaction in different fields were high and satisfactory and the technicians should allocate much more time for interaction with patients in order to improve their satisfaction.

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1. Introduction

Self-treatment at home is the first line of treatment all over the world. Most of the patients and their relatives seek for other treatment ways when they fail to treat themselves at home. Today, one of the most important and most available alternatives is to use pre-hospital emergency services (Press, 2006). In health care system, the first contact of critical and emergency patients is generally made with pre-hospital emergency center (Esmaili Vardanjani et al., 2011). This first contact has an important effect on the patients' view about other sections of the treatment system. Therefore, patients' satisfaction with this system will affect on satisfaction with other sections as well.

In the past, treatment was the only criterion used for evaluating the quality of cares and level of patients' satisfaction (Vuori, 1991). But gradually, other aspects of caring such as softness, availability, quality of interpersonal communications between the patients and care providers were added as different aspects of satisfaction to the previous criterion, i.e.,

patient's improvement (Haddad et al., 1998). Gradually, factors such as economic aspects and reputation seeking by hospitals and their managers led to the satisfaction of patients to be more considered by the managers (Margolis et al., 2003).

Patients' satisfaction includes a series of their experiences of health care system (Press, 2006) arising from their evaluation of how the care provider has mentally and physically communicated with them and how their physical and mental needs have been met by the care provider (Oluwadiya et al., 2010). Patients' satisfaction has a basic role in health preservation and disease prevention, in the manner that increase of patients' satisfaction will result in their physical and mental recovery (Rodbary et al., 2009).

Considering the importance of patients' satisfaction with the services provided by pre-hospital emergency center and also considering the fact that at the present time an exact and accurate attention to the satisfaction aspects of emergency patients and their special caring needs is felt at this

stage between the domestic and foreign studies, the present study was conducted with the goal of evaluating the satisfaction level of patients with the services provided by the pre-hospital emergency center (115) in Shahr-e-Kord city, Chahar Mahal va Bakhtiari Center.

2. Material and Methods

The present study is a descriptive and analytic study conducted in Shahrekord city in the first half of 1391 (2012). Since no estimation of patients' satisfaction was available, sample volume was estimated at 384 people by considering $p=0.05$, a confidence interval of 95% and an accuracy of 5% and finally 450 samples were studied by considering the possible loss. Samples were selected from among the patients and injured people who had been transferred by the ambulances of pre-hospital emergency center of Shahrekord city to Hajar and Kashani Hospitals of that city. To obtain the number of samples in any of the pre-hospital emergency stations, the quota of each station was determined considering the statistics of patients transferred from any of the stations to the hospital and by using classification sampling. Then, the samples were selected by using simple sampling method and the days of the week. The criteria for inclusion of samples in the study included transfer to hospital by ambulance and subsequent hospitalization in the hospital. The criteria for exclusion from the study included the patients with a consciousness level less than 15 GCS, children less than 12 years old, the patients with much pain or high stress and dissatisfaction of patients for participation in the study. In case of any companion, patients who were not conscious or could not answer and/or children less than 12 years old, their companions were used for answering and participating in the study and in case of no companion, the patients were excluded from the study.

Since satisfaction is a complete and multidimensional issue, one of the most important and principal accepted ways to study the patients' satisfaction is the use of multidimensional questionnaires that evaluate different areas of patients' experiences (Oluwadiya et al., 2010). Therefore, questionnaires were used in this study to investigate the patients' satisfaction. To prepare a questionnaire, two questionnaires were merged including Emergency Care Satisfaction Scale questionnaire (CECSS¹) (Anders et al., 2010) and the questionnaire used for investigation of patients' satisfaction with the pre-hospital emergency services in Malaysia (Anisah et al., 2008). After translation and fulfillment of the comments of a few professors

of Shahrekord University of Medical Science for the purpose of reliability and validity, the contents of the questionnaire in view of validity was confirmed and its reliability was proved through dividing into two halves using Cronbach's alpha ($\alpha = 0.81$) considering the concept of satisfaction which is subject to time. The final questionnaire consisted of 33 questions, 9 questions were used to study demographic information and 24 were used in Likert Scale from 1 to 10 to study the satisfaction of patients with pre-hospital emergency services. The 9 questions related to demographic characteristics included age, gender, education, marital status, records of enjoying emergency services, patient's problem, period of using pre-hospital emergency services, time of mission (day or night) and job (dependence on the healthcare system, i.e., 1st or 2nd grade family members of healthcare system personnel). The 24 satisfaction questions included 5 questions about ambulance, 5 questions about the behavior of technicians with the patient and companions, 5 questions about the professionalism of technicians, 5 about their performances, 4 questions about pre-hospital emergency efficiency and one question about general viewpoint of patients concerning pre-hospital emergency. Data was analyzed by using SPSS software, version 16, statistical descriptive test, independent t test, variance analysis and Pierson Correlation test.

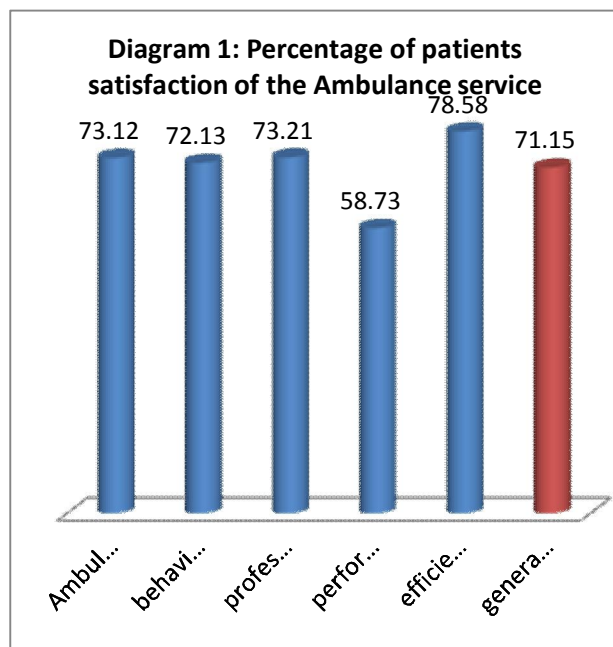
3. Results

Based on the obtained results, the group who had used pre-hospital emergency services the most were in the age range of 15 to 30 (37.3%) and 30 to 45 (26.8%) and the group who had used pre-hospital emergency services the least include those above 75 years old (4.6%). 53.6% of the samples included women and 46.4% were men. Most of them had academic degrees (34%). 60.8% of them were married and 39.2 were single. Most of them (74.5%) had already enjoyed emergency services.

Based on the results of independent t test and variance analysis, satisfaction with pre-hospital emergency services in men, low educated people, married people, those who had already enjoyed emergency service and those who had emergency problems was significantly higher than in other patients (table 1). Satisfaction level in all areas was above 50% and was generally 71.12% (graph 1). The highest satisfaction level observed in the answered questions was for general appearance of ambulance, relaxation and safety feeling upon seeing the ambulance and technicians and availability of technicians. Moreover, the least level of satisfaction was for technicians' answering to all patients' questions and the comfort during transfer with ambulance (table 1).

¹ - Consumer Emergency Care Satisfaction Scale

	Variables	Ambulance	Behavior of technicians	Technicians' professionalism	Technicians' performances	Efficiency of emergency center (115)	Total score of satisfaction
		Mean (standard deviation)	Mean (standard deviation)	Mean (standard deviation)	Mean (standard deviation)	Mean (standard deviation)	Mean (standard deviation)
Gender	Male	39/88(7/14)	40/19(8/95)	32/23(7/69)	30/19(1/19)	25/80(5/02)	1/68(3/36)
	Female	33/68(7/78)	32/48(8/68)	26/73(7/44)	28/68(9/65)	21/64(5/39)	1/43(3/57)
	p-value	0/000	0/000	0/000	0/377	0/000	0/000
Education	Elementary school	38/76(6/97)	37/89(7/84)	30/97(6/96)	33/04(8/46)	23/80(4/35)	1/64(3/05)
	Junior school	40/57(3/64)	42/85(6/59)	32/42(6/65)	25/85(1/1)	25/14(4/48)	1/66(2/18)
	High school diploma	37/36(7/25)	37/89(8/51)	30/08(7/67)	28/50(1/03)	24/52(5/60)	1/58(3/21)
	Academic degree	32/84(8/71)	31/3(10/41)	26/25(8/58)	26/59(1/16)	22/11(6/50)	1/39(4/16)
	p-value	0/000	0/000	0/005	0/002	0/118	0/000
Marital status	Single	34/91(9/35)	34/83(11/1)	28/48(9/67)	26/53(1/44)	23/1(6/56)	1/47(4/25)
	Married	37/62(7/01)	36/86(8/37)	29/80(6/76)	31/19(9/98)	23/90(4/90)	1/59(3/21)
	p-value	0/043	0/203	0/321	0/009	0/369	0/050
Previous use of emergency services	+	38/82(5/08)	39/10(6/75)	31/28(6/27)	33/30(9/53)	25/10(3/68)	1/67(2/60)
	-	35/78(8/77)	35/02(10/2)	28/60(8/45)	28/01(1/08)	23/05(6/05)	1/50(3/90)
	p-value	0/043	0/021	0/072	0/008	0/048	0/012
Patient's problem	Emergency	39/28(5/75)	39/52(7/18)	32/02(6/12)	32/21(9/92)	25/64(3/70)	1/68(2/50)
	Non-emergency	29/35(8/96)	26/92(9/19)	22/04(8)	21/83(9/32)	18/09(6/11)	1/18(3/83)
	p-value	0/000	0/000	0/000	0/000	0/000	0/000
Period of enjoying emergency services	Less than 30 min.	36/77(7/34)	36/04(9/69)	28/48(8/04)	27/80(1/06)	23/51(5/92)	1/52(3/54)
	30-60 min.	36/08(8/49)	35/75(9/43)	29/65(7/94)	30/11(1/05)	23/49(5/39)	1/55(3/72)
	More than 60 min.	50(0/0)	50(0/0)	40(0/0)	49(1/41)	29(1/41)	2/18(2/82)
	p-value	0/50	0/116	0/110	0/014	0/390	0/046



Independent t test showed that there was no significant difference between satisfaction and its areas and dependence on the health system (1st and 2nd grades patients are of the personnel of healthcare system) and time of mission (day and night) ($p>0.05$).

Pierson correlation test showed a direct and significant relation between satisfaction areas (ambulance, behavior of technicians, their

professionalism, their performance and the efficiency of emergency center (115) ($p=0.000$). Moreover, a positive and significant correlation was observed between satisfaction and general satisfaction ($p<0.000$).

4. Discussions

The obtained results showed that generally most of the participants gave high scores to all questions of the questionnaire designed for investigating people's satisfaction with pre-hospital emergency services. The highest items of satisfaction were for efficiency of emergency center (115) in the areas including the time it takes for the ambulance to reach the incident place, the time it takes for the ambulance to reach hospital from the incident place, and the speed of reception at the hospital. It seems that the reason for the high score given by people to the question about their satisfaction with the period of ambulance response in this study was related to the small area of Shahrekord city, lack of any traffic in that city, existence of 4 stations in that city that had been located in suitable distances from each other and could cover different parts of the city quite well. One of the reasons of low response time in this study can be related to the high importance attached by the technicians to the time it takes for the ambulance to reach the incident place and to the transfer of patient with maximum speed to the hospital. Therefore, in most cases they drive with a high speed and continuous audible alarms, they pass red lights and move in the opposite sides. It seems better to

consider this issue a bit more. May be it is better to provide a better response time, to spend more time beside the patient while considering the critical time for transferring the patient to the hospital, to consider a safe speed for the ambulance and to control and manage to some extent the ambulances that use continuous audible alarms, pass red lights and move in the opposite directions.

Prompt response of the pre-hospital emergency personnel in the critical missions is one of the high expectations of people and authorities and the emergency service system is strictly seeking to achieve that. Therefore, most of the pre-hospital emergency service systems have set the evaluation of their performance based on the level of achievement to such prompt response and its reduced time (AL-Shaqsi, 2010). Although response time is one of the criteria for the quality of emergency services, it should be noted that the lives of patients and technicians as well as caring quality must not be sacrificed for ambulance speed or reducing the response time (Pricel, 2006). Response time is called Pitfall and it has been specified that making efforts for reducing the response time will result in losing the tie for collecting information, evaluation of patient's condition and situation of the incident place, necessary time for communicating with the patient, etc. These cases will have a negative effect on the quality of caring the patient (AL-Shaqsi, 2010). The pressures of time and the environment surrounding the patient of injured person will force the pre-hospital emergency nurses to make decisions without having sufficient information. In emergency and complex situations, the decisions made by the nurses are not always correct and justifiable (Esmaeili Vardanjani et al., 2011). Although response time is a very important factor in reducing the mortality of diseases and emergency incidents, the existing shortcomings in manpower and ambulance equipment may reduce the effectiveness of the performed missions (Bahrami et al., 2011). Pricel believes that the technicians should emphasize on the quality criteria for caring the patients much more than response time which disturbs the caring procedure and will have negative and inappropriate effects on health, safety, welfare and good feeling of the patients (Pricel, 2006).

Another item that got the highest score in this study was the patients' satisfaction with reception period in the hospital. The reason is that the pre-hospital emergency personnel are obliged to deliver their patient to the hospital and that the physicians working in the emergency ward prioritize the reception of the patients transferred by the ambulance. Moreover, technicians must deliver their patients to the emergency ward of the hospital in the

least minimum time and must then return to their stations to be prepared for the next possible missions. These all have reduced the time for patients to be received in the hospital as well as their increased satisfaction.

Another reason for high satisfaction of people with pre-hospital emergency services in this study includes sending ambulances almost for all phone calls to the emergency center (115). Emergency services which are provided for free have increased people's satisfaction. Studies have shown that high costs of hospitals reduce patient's satisfaction. Furthermore, a significant relation between the paid price and patients' satisfaction has stated in other studies as well (Rezaei, 2003; Jafari et al., 2007; Khashjan et al., 2006; Malek-Malekan et al., 2010).

The present study which was conducted convergent to other studies (Rodbari et al., 2009; Jafari et al., 2007; Mosaddeghzadeh, 2006) showed that satisfaction in low educated individuals was more than educated individuals. The results of the study made by Roudbari et al. confirmed the results obtained from the present study and showed that low educated people have lower expectations due to their low education (Rodbari et al., 2009).

In this study, satisfaction among male patients was higher than that of women due to lack of female technicians and nurses in the ambulance. In the study conducted by Akbari et al. (Stewart, 2001) and Jafari et al. (Jafari et al., 2007), satisfaction between the two genders had no significant difference, but Mesdagh Zadeh showed that patients' gender is effective in their satisfaction (Mosaddeghzadeh, 2006). However, patient's gender is one of the important and effective factors in the decisions made by nurses in pre-hospital emergency missions (Vuori, 1991).

In the present study, age-related findings on the patients showed that those between 15-30 years old had the highest level of satisfaction. Roudbari et al. showed that high satisfaction of patients with 15-30 years old was due to their pain tolerance threshold (Rodbari et al., 2009). Furthermore, it has been indicated that there is a significant relation between age and level of satisfaction and emergency services (Khashjan et al., 2006).

No significant relation was observed between the use pre-hospital emergency services and patients' satisfaction level. It seems that patients with acute and emergency problems were more satisfied as compared to non-emergency cases. In this relation, the study conducted by Akbari et al. showed that those patients suffering acute pain had declared to be more satisfied (Stewart, 2001).

The areas with the least score in this study were related to the performance of technicians for the items "The technician provided sufficient explanations for his measures" and "The technician ensured that he has answered all my questions". The reasons of this dissatisfaction include lack of sufficient time in emergency missions to provide the patient and his/her companions with necessary explanations. Esmaeili et al. explained that irritation of patient and his/her companions and actions to the contrary of their desires are common issues in emergency cases. This is because that there is no sufficient time for talking and explaining to the patient. They also explained that most of the pre-hospital emergency nurses are upset that due to the time pressure they cannot explain the patient's condition for his/her relatives (Esmaeili Vardanjani et al., 2011). Another reason for low scores given to this area is the high importance the technicians attach to the efficiency of emergency center (115), i.e., time indexes of emergency because as the conduction speed of missions increases, the time necessary for explaining the taken measures to the patient and answering to his questions as well as giving sufficient time to the patient for asking questions will reduce. It has been shown in this study that the highest score for the efficiency of emergency center (115) was given to time criteria and the least score was related to performance area. Pricel explains that the technicians should emphasize on caring quality criteria instead of highly emphasizing on the response time that disturbs the caring procedure and has inappropriate and negative effects on health, safety and well being of the patients (Pricel, 2006).

Another item that affects the satisfaction of patients with pre-hospital emergency services is the appearance of ambulance and technicians. These two are the first cases that patients observe and judge about them. Therefore, cleanliness and good looking appearance of ambulance and emergency personnel is one of the effective cases on the patients' satisfaction. Anish believes that the cloths and uniforms of technicians reflect their adornment, cleanliness and professionalism of personnel and treatment team (Anisah et al., 2008). The available equipment and facilities inside the ambulance is another item that had a significant relation with the satisfaction of patients in our study. Esmaeili et al. explained that availability of necessary equipment and facilities inside the ambulance proportional to the mission as well as having knowledge and capability and being experienced in using the equipment and facilities are effective factors in the decisions made by pre-hospital emergency nurses (Esmaeili Vardanjani et al., 2011). In this relation, Vaitkaitis explained that exhaustion of ambulances in the pre-hospital

emergency center is the most important acute problem of pre-hospital emergency services (Vaitkaitis, 2008).

Professionalism of technicians and their self confidence and qualification were the issues that were questioned in the present study to investigate the patients' satisfaction. It was specified that there was a significant relation between professionalism, self confidence and qualification of personnel and the patients' satisfaction. Abedi et al. considered theoretic knowledge, clinical skill and the capability to make correct decision in facing critical situations by caring staff as qualification (Abedi et al., 2004). Ramezani Badr et al. explained that a nurse is capable and efficient that has sufficient knowledge and skill and can use the information correctly (Ramezani-Badr et al., 2009). Self confidence during the missions is one of the key items in decision making capability of pre-hospital emergency nurses and as a result in the patients' satisfaction. Self confidence increases decision making and correct performance. Necessary and sufficient knowledge and experience are the most important factors for providing self confidence in the pre-hospital emergency nurses (Esmaeili Vardanjani et al., 2011).

Conclusion

The results of this study show that patients' satisfaction with pre-hospital emergency services in Shahr-e-Kord is in a good and satisfaction level. Although pre-hospital emergency personnel are under pressure in view of time and especially during emergency mission, it is recommended that they provide the patients and his/her companions with necessary and sufficient explanations about the measures they make and provide them with more time for asking questions or answering their questions. It is also recommended that while considering the critical factor of time, they have a safe communication and interaction with patients in order to remove their information demands.

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